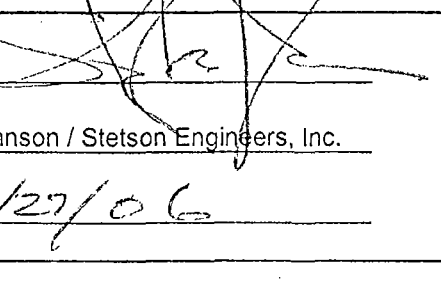
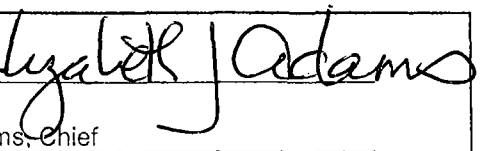
INTERIM REMEDIAL ACTION REPORT

San Gabriel Valley Area 2 Superfund Site
San Gabriel Valley Water Company Plant B5 Subproject
Operable Unit 05
Part of the Baldwin Park Operable Unit
Los Angeles County, California

September 2006

To the best of our knowledge, after thorough investigation, we certify that the information contained in or accompanying this submission is true, accurate and complete. We are aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

IRA Report Prepared By:	**Respondents**	*Signature:*  Stephen B. Johnson / Stetson Engineers, Inc. *Date:* 9/27/06

Approved By:	**EPA Region 9 Approving Official:**	*Signature:*  Elizabeth Adams, Chief Site Cleanup Branch, Superfund Division *Date:* September 28, 2006

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EPA CERCLIS ID Number CAD 980818512

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Section I - Introduction

The San Gabriel Valley Superfund Sites

The San Gabriel Valley Superfund Sites include multiple areas of contaminated groundwater in the San Gabriel Basin aquifer, a primary source of drinking water for Southern California. The San Gabriel Valley Superfund sites include areas of soil and groundwater contamination underlying portions of the cities of Alhambra, Arcadia, Azusa, Baldwin Park, Industry, Irwindale, El Monte, La Puente, Monrovia, Rosemead, South El Monte, and West Covina, in eastern Los Angeles County. The area is largely suburban, with a mix of residential, commercial, and industrial development.

Groundwater contamination was first detected in the San Gabriel Valley in 1979. By 1984, 59 wells were found to be contaminated with volatile organic compounds (VOCs). As of June 2005, 202 of 273 potable wells have detectable levels of VOCs, perchlorate, N-nitrosodimethylamine (NDMA), or 1,4-dioxane. Despite the widespread areas of contamination, the San Gabriel Basin aquifer continues to provide approximately 90 percent of the domestic water supply for the Valley's more than one million residents.

The San Gabriel Valley Area 2 Superfund site is one of four San Gabriel Valley groundwater sites listed on the National Priorities List. The other three San Gabriel Valley Superfund sites are the San Gabriel Valley Area 1 site (which includes the Whittier Narrows, El Monte, and South El Monte Operable Units), the San Gabriel Valley Area 3 site (which addresses contamination in the

Alhambra area), and the San Gabriel Valley Area 4 site (which includes the Puente Valley Operable Unit).

The San Gabriel Valley Area 2 Superfund site includes four operable units, which are collectively known as the Baldwin Park Operable Unit or BPOU. This interim remedial action report addresses one of the four operable units: the San Gabriel Valley Water Company B5 Operable Unit (designated by EPA as Operable Unit 05 of the San Gabriel Valley Area 2 site).

The San Gabriel Valley Area 2 Superfund Site

Extent of Contamination

The San Gabriel Valley Area 2 Superfund Site addresses multiple, commingled plumes of groundwater contamination which have resulted in an area of contamination over a mile wide and eight miles long. The area of contamination extends to the southwest from the City of Azusa through portions of the cities of Irwindale, Baldwin Park, West Covina, and Industry. The depth to the groundwater varies from about 150 to 350 feet, and the groundwater contamination extends from the water table to more than 1,000 feet below ground surface. The most prevalent contaminants in the groundwater are trichloroethylene (TCE), perchloroethylene (PCE), carbon tetrachloride (CTC), perchlorate, and NDMA. TCE, PCE, and CTC are solvents used for degreasing and cleaning; perchlorate is a component of solid-fuel rockets; and NDMA is associated with liquid-fuel rockets. Other VOCs are also present, including the chemical 1,4-dioxane, which has been used as a stabilizer in chlorinated solvents. The peak contaminant concentration historically measured in groundwater at the site is 38,000 micrograms per liter (ug/l) PCE.

Remedial Investigation/ Feasibility Study (RI/FS), Record of Decision, and Explanation of Significant Differences (ESD)

From 1990 to 1993, EPA completed a remedial investigation and feasibility study for the site. The investigation included the compilation and analysis of sampling results from existing water supply wells, temporary reactivation and sampling of inactive water supply wells, installation of a 1,500-foot deep monitoring well (by EPA), installation and sampling of more than two dozen shallow groundwater monitoring wells (by Potentially Responsible Parties [PRPs]), development of a groundwater flow model of the aquifer, and preliminary discussions with local water agencies over the role of local water agencies in the cleanup. In 1993, EPA issued its proposed cleanup plan.

EPA adopted a Record of Decision (ROD) for an interim remedy for the site in 1994 and updated the ROD in May 1999 with an Explanation of Significant Differences (ESD). The remedial objectives expressed in the ROD and ESD are to prevent future increases in, and begin to reduce, concentrations of

groundwater contaminants in the Baldwin Park area by limiting further migration of contaminated groundwater into clean and less contaminated areas or depths that would benefit most from additional protection and by removing contamination from the aquifer. The ROD specifies extraction of contaminated groundwater at the downgradient end of two broad subareas of contamination, at locations and rates sufficient to hydraulically-contain contaminated groundwater moving through each subarea during all anticipated groundwater flow conditions. A secondary objective is to provide data necessary to determine final clean up standards for the aquifer.

Identification of Potentially Responsible Parties (PRPs)

The majority of the PRPs at the site were identified between 1990 and 1997. The PRPs were identified after a multi-year cooperative effort between EPA and the California Regional Water Quality Control Board, Los Angeles Region (RWQCB), which included inspections of more than 1,400 commercial and industrial businesses in the area and testing of soil or groundwater where contamination was observed or suspected. PRPs were identified using test results, historical Federal, State and local records, responses to information requests, and other information.

EPA Enforcement Efforts and EPA-PRP-Water Agency Negotiations

A PRP group performed initial planning and pre-design work from approximately 1995 to early 1997. During this period, negotiations continued with several regional and local water agencies over implementation of the cleanup plan. In 1998, the negotiations began to focus on a plan proposed by the Main San Gabriel Basin Watermaster ("the Watermaster," a court-appointed entity responsible for administering the water rights agreement in the San Gabriel Basin). The Watermaster Plan proposed that the treated groundwater be used locally, and that local agencies play a major role in designing, building, and operating the cleanup facilities. The Watermaster Plan was developed in response to the impacts of perchlorate and NDMA, which had forced the closure of additional public water supply wells in the area, leading to renewed local interest in using the treated groundwater produced by the cleanup to meet potable water demands.

In mid-1999, as PRP-water entity negotiations continued, EPA resumed Consent Decree negotiations with the PRPs. In September 1999, EPA received a "Good Faith Offer" from several of the PRPs to design, build, and operate the cleanup facilities. EPA-PRP negotiations continued into early 2000 in an effort to translate the September 1999 offer into a binding commitment. By June 2000, however, negotiations had not produced agreements between EPA and the PRPs, or between the PRPs and the Watermaster. EPA concluded that negotiations alone were unlikely to produce an agreement and, on June 30, 2000, issued a Unilateral Administrative Order ("Order") directing the 19 PRPs to

complete the remedial design and make arrangements for the construction and operation of the groundwater extraction wells, treatment systems, and related cleanup facilities.

Some of the PRPs complied with EPA's Order, but the design work required by the Order was slowed by uncertainty over local involvement in the cleanup. Still unresolved in 2000 was the ultimate use of the treated groundwater, the selection of the perchlorate treatment technology, treatment facility locations, the extent to which existing water supply wells would be used as groundwater extraction locations, and the extent to which local water entities would be involved in design, construction, and operation of the facilities.

In Fall 2000, negotiations between the PRPs and water entities resumed, and in January 2001 a 25-page preliminary agreement was reached between five water entities and eight of the PRPs. The agreement, known as the Memorandum of Understanding (MOU), outlined basic principles to be incorporated into an agreement under which the PRPs would fund most of the cost of designing, building, and operating the groundwater extraction and treatment facilities called for in EPA's cleanup plan and the water entities would construct, own, and operate the facilities.

In March 2002, after lengthy negotiations, the PRPs and water entities successfully translated the MOU into a binding agreement. Eight PRPs (currently referred to as "Cooperating Respondents" or "CRs") and seven water entities signed the "BPOU Project Agreement," which was declared effective in May 2002 when the Los Angeles County Superior Court approved Watermaster's execution of the BPOU Project Agreement. The Project Agreement commits the CRs to fund the design, construction, and operation of the groundwater extraction, treatment, and conveyance facilities needed to satisfy EPA's cleanup goals and meet local water supply needs. The water entities and their contractors are completing most of the design and construction work, with EPA oversight and CR involvement pursuant to the Project Agreement. The Project Agreement not only addresses funding and work responsibilities, but provides criteria for selection of water treatment technologies, establishes a cost consultant and risk manager, describes contracting requirements, requires payment of management and performance fees, requires efforts to obtain public funds, includes audit and insurance requirements, resolved certain water entity lawsuits and claims, and provides dispute resolution procedures.

The Site Remedy

The remedy for the site is being constructed as four separate groundwater pump and treat systems, each ranging in capacity from 2,500 gallons per minute (gpm) to 7,800 gpm. Each system is designated as a separate operable unit of the San Gabriel Valley Area 2 Site. The extraction rates and locations were developed during the remedial design process using a numeric model of groundwater flow

and particle movement in the aquifer. EPA determined that, as a long-term average, a total of 21,750 gpm of contaminated groundwater must be extracted at eight locations. Total treatment capacity will exceed 25,000 gpm, or 36 million gallons per day (MGD), of contaminated groundwater. The work has been "phased" to allow construction to begin on the initial subprojects as design work is completed on the other subprojects. Each subproject has one or more groundwater extraction wells and a series of treatment processes including air stripping or liquid phase granular activated carbon, ion exchange, and ultraviolet light (with hydrogen peroxide). The fourth of the four subprojects, the subject of this Interim Remedial Action (IRA) Report, is the San Gabriel Valley Water Company (SGVWC) B5 subproject. The other three subprojects are the La Puente Valley County Water District subproject, the Valley County Water District SA1 subproject, and the SGVWC B6 subproject.

Section II – Operable Unit 05 Background

The subject of this IRA Report is the San Gabriel Valley Water Company B5 subproject, Operable Unit 05 of the San Gabriel Valley Area 2 site. The subproject is located at 209 Perez Place, east of the San Gabriel River Freeway and north of Valley Boulevard in the City of Industry. It is owned and operated by SGVWC, a private water company regulated by the California Public Utilities Commission. SGVWC serves approximately 160,000 people in the cities of Arcadia, Baldwin Park, El Monte, Industry, Irwindale, La Puente, Montebello, Monterey Park, Pico Rivera, Rosemead, San Gabriel, Santa Fe Springs, South El Monte, West Covina, Whittier and unincorporated areas of Los Angeles County.

The EPA's targeted average groundwater extraction rate for the subproject is 7,000 gpm. Extraction rates can vary daily or weekly but are expected to average the targeted rate over time. It is anticipated that down time for maintenance and repair of the BPOU facilities will be 10 percent or less. If down time is 10 percent, the average flow rate at the B5 Plant will be 7,020 gpm (which exceeds the EPA targeted flow rate). The EPA's targeted rates for the four subprojects are listed in Table 1.

SGVWC owns four existing potable water wells at its Plant B5, which include two shallow wells (Well B5A and B5B) and two deep wells (Wells B5C and B5D). VOCs were detected above the Maximum Contaminant Levels (MCLs) at SGVWC Wells B5A and B5B in the 1980s, prompting SGVWC to drill Well B5C in May 1989 to provide a source of supply to blend with groundwater produced from SGVWC Wells B5A and B5B to meet drinking water standards for VOCs. In addition, nitrate was detected above the MCL at SGVWC wells B5A and B5B in the mid 1990s. SGVWC Well B5D was subsequently drilled in 1997 to provide an alternative source of supply to blend with groundwater produced from SGVWC Wells B5A and B5B in the event SGVWC Well B5C is out of service. SGVWC Wells B5C and B5D typically were used in rotation to provide a reliable

blending source for VOCs and nitrate contained in water produced from SGVWC Wells B5A and B5B.

Table 1. BPOU Target Extraction Rate and Planned Capacity

Subproject	EPA-Approved Extraction Rate	Planned Capacity
La Puente Valley County Water District subproject	2,250 gpm	2,500 gpm
San Gabriel Valley Water Company B6 subproject	6,750 gpm	7,800 gpm
Valley County Water District subproject	6,000 gpm	7,800 gpm
San Gabriel Valley Water Company B5 subproject	7,000 gpm	7,800 gpm
TOTAL	22,000 gpm	25,900 gpm

To address the VOC contamination and comply with drinking water standards, SGVWC planned in January 1998 to install a 5,000 gpm VOC treatment facility at SGVWC Plant B5. Construction of the treatment facility was deferred after NDMA was detected at SGVWC Well B5B above the California Action Level (AL) of 2 nanograms per liter (ng/l) in July 1998. Action Levels are now known as Notification Levels (NLs). SGVWC immediately removed SGVWC Well B5B from service when NDMA was detected. The well is currently on inactive status. California Department of Health Services (CDHS) revised the NL for NDMA to 10 ng/l in February 2002.

Perchlorate has been detected at SGVWC Wells B5A and B5B at concentrations below the NL of 6 ug/l. SGVWC Well B5B has not been sampled for perchlorate since 1998 because of its inactive status.

Water quality data indicate that contaminants have impacted the City of Industry San Fidel Well Field. Therefore, existing Industry Well No. 5 has been added to the BPOU remedy extraction plan. Industry Well No. 5 is about 800 feet deep, produces about 1,200 gpm, and has been contaminated with perchlorate, VOCs and NDMA.

A new well, known as SGVWC B5E, has been constructed at the B5 site with a pumping capacity of 3,300 gpm to allow extraction of contaminated groundwater from targeted depths. The SGVWC B5 treatment facility will treat water from SGVWC Well B5B (or B5A if B5B is inoperative), B5E, and Industry Well No. 5.

The treatment facility for the SGVWC B5 subproject was designed from late 2001 to early 2003. The facility is designed to remove VOCs, perchlorate, NDMA and 1,4-dioxane. The design capacity of the treatment facility is 7,800 gpm, and the targeted extraction rate, based on groundwater flow modeling and particle tracking, is 7,000 gpm. The preliminary targets for the three extraction wells are 3,000 gpm (SGVWC B5B), 3,000 gpm (SGVWC B5E), and 1,000 gpm (City of Industry Well No. 5). The targeted rates will be re-evaluated in late 2006 based on updated groundwater flow modeling. The plant uses liquid-phase granular activated carbon (LGAC) to remove VOCs, a fixed bed ion exchange unit to remove perchlorate, and an ultraviolet (UV) light/oxidation process to remove NDMA and 1,4-dioxane.

The LGAC treatment facility consists of eight pairs of reaction vessels, operating in series (total of 16 vessels) in a lead-lag arrangement. Water enters at the top of the lead vessel and flows down. Water exits the lead vessel and enters the top of the lag (polish) vessel. When one vessel within each pair is in backwash or when the carbon is being replaced, the other one remains in operation. Each pair of the vessels may treat up to 975 gpm of flow for a total capacity of 7,800 gpm. Each vessel contains 20,000 pounds or 714 cubic feet of granular activated carbon. The flow to each pair of vessels is regulated by the treatment facility operator manually adjusting a valve to the inflow for each vessel. Flow through each pair of vessels is verified with a flow meter dedicated to each of the eight sets of LGAC vessels. A 35,000 gallon bolted steel backwash tank is provided to hold the backwash waste from the vessels.

The fixed bed ion exchange treatment facility consists of eight pairs of ion-exchange vessels, operating in series (total of 16 vessels). Each pair of vessels may treat up to 975 gpm of flow for a total capacity of 7,800 gpm. Water enters at the top of the lead vessel and flows down. Water exits the lead vessel and enters the top of the lag (polish) vessel. The flow to each set of vessels is regulated by the treatment facility operator manually adjusting a valve to the inflow for each vessel. Flow through each vessel is verified with a flow meter dedicated to each of the eight sets of ion exchange vessels. Sample ports are located at the inflow to the lead vessels, at the cross-over point between each of the eight sets of ion-exchange vessels, and at the discharge of the lag vessel. When the lead vessel is saturated with perchlorate, it is taken off-line and the lag vessel becomes the lead vessel. The spent media from the saturated vessel are removed and fresh media are installed. The fresh vessel is then put back on as the lag vessel. All the media exchange is performed on-site and on-line with no system-wide down time.

Following the ion exchange process, the water will be directed through the UV/oxidation system, which uses UV light lamps to break down NDMA by direct photolysis. With the addition of hydrogen peroxide, UV light will also break down 1,4-dioxane by oxidation. The UV/oxidation system installed at SGVWC Plant B5

consists of two independent trains. Each train consists of three reactor chambers and each chamber contains 1 or 2 UV reactors (UVRs). Each UVR contains 72 UV lamps and sleeves. There are a total of 5 UVRs in each train; therefore, each train contains 360 UV lamps (72 UV lamps per UVR x 5 UVRs). The treated water will be pumped through a dedicated pipeline to the existing 3 million gallon reservoir and a 600,000 gallon reservoir to be constructed in late 2006 at SGVWC Plant B5. Prior to distribution the water is disinfected.

VOCs, perchlorate, NDMA and 1,4-dioxane treatment equipment were designed by equipment vendors based on maximum expected influent concentrations and non-detect effluent concentrations. The overall plant layout and design of piping, electrical, and instrumentation was designed and coordinated by Stetson Engineers Inc. (Stetson) and CalPower Engineering in accordance with the Uniform Building Code. Design review was performed by SGVWC, the Cooperating Respondents (CRs), and EPA.

Construction of the subproject is expected to be complete by September 30, 2006. In November 2006, SGVWC is expected to begin a series of start-up tests to provide data needed to obtain an amended permit from CDHS for the operation of the B5 Treatment Facility as a potable water supply. Table 2 summarizes construction and planned operating details for the groundwater extraction wells, including the well available for backup use. Table 3 lists the treatment system vendors and the criteria used to design the treatment facilities.

Table 2. Construction Details – SGVWC Plant B5 Groundwater Extraction Wells

Well Names	Capacity	Depth	Screened Interval	Notes
SGVWC B5B	3,300 gpm	516 feet deep	multiple screened intervals from 172 to 478 feet	primary well
SGVWC B5E	3,300 gpm	835 feet deep	screened intervals from 500 to 800 feet	primary well
Industry No. 5	1,200 gpm	830 feet deep	screened intervals from 380 to 810 feet	primary well
SGVWC B5A	3,300 gpm	512 feet deep	multiple screened intervals from 110 to 299 feet	backup well

After treatment, water will be conveyed to the existing 3 MG on-site reservoir then distributed to SGVWC's customers. A new 0.6 MG on-site reservoir will be constructed to replace an old reservoir which was removed to make room for the

treatment facilities. Sodium hypochlorite will be added to the treated water for disinfection before entering the reservoir. There will be no brine produced from the ion exchange process because it uses disposable resin media. Plate 2 shows a plan view of the treatment plant site. Plate 3 is a diagram of the treatment process at SGVWC Plant B5.

Table 3. SGVWC Treatment Equipment - Design Criteria and Vendors

Contaminants Treated	Technology	Vendor	Design Criteria	
			Influent Concentration	Effluent Concentration
VOCs	LGAC	USFilter	5 ug/l 1,1,1-TCA 5 ug/l 1,1-DCA 5 ug/l 1,1-DCE 10 ug/l 1,2-DCA* 5 ug/l benzene 5 ug/l CTC 5 ug/l chloroform 5 ug/l cis-1,2-DCE 5 ug/l ethylbenzene 5 ug/l methylene chloride 50 ug/l PCE 5 ug/l toluene 5 ug/l trans-1,2-DCE 50 ug/l TCE 5 ug/l xylene *Controlling Compound	< 0.5 ug/l for all VOCs
Perchlorate	Fixed Bed Ion Exchange	Calgon Carbon Corporation	200 ug/l perchlorate	< 4.0 ug/l perchlorate
NDMA and 1,4-dioxane	Ultraviolet light with peroxide	Trojan Technologies	0.9 ug/l NDMA 5 ug/l 1,4-dioxane	< 0.002 ug/l NDMA, < 3 ug/l 1,4-dioxane

SECTION III -- CONSTRUCTION ACTIVITIES

Permitting

SGVWC obtained an industrial waste discharge permit from the Los Angeles County Sanitation Districts (CSD) for one of two offsite discharges at the site, the periodic discharge of backwash water from the LGAC treatment system. The second offsite discharge from the site will be the distribution of the treated water.

A CDHS amended water supply permit will be obtained for the operation of the treatment facility and distribution of the treated water. No permit is required for discharge of water to the San Gabriel River during startup testing.

VOCs, Perchlorate, NDMA and 1,4-Dioxane Treatment Facility
Facilities to remove VOCs, perchlorate, NDMA and 1,4-dioxane have been constructed at SGVWC Plant B5. The project consists of the installation of new LGAC, ion exchange and UV/oxidation equipment, construction of new buildings to house the equipment, construction of a control/electrical room, and modifications to the existing piping and pumps at SGVWC Plant B5 to integrate the new processes.

Site Preparation
Site preparation activities included removing an existing reservoir and booster pump station to make room for the LGAC units, over-excavation, re-compaction, and grading of soils under the treatment facilities. Excavation was performed where required for the buildings, backwash tank, valve vaults, meter vaults, and pipe trenches.

Process Installation
The process equipment has been installed on reinforced concrete slabs. The UV/oxidation equipment is housed in a concrete block building constructed as part of the project. Connecting piping and wiring has also been constructed as part of the project. All equipment installation and buildings were designed following the Uniform Building Codes (UBC) for seismic safety.

New Extraction and Monitoring Wells Construction
At the SGVWC B5 plant, one new groundwater extraction well, designated Well B5E, and six new piezometers have been constructed. The piezometers are designated PZ3-5EAS, PZ3-5EAD, PZ3-5EBS, PZ3-5EBD, PZ3-5BAS, and PZ3-5BBS and will be used to monitor changes in water levels near the B5B and B5E extraction wells. In addition, four new piezometers have been constructed in two boreholes adjacent to Industry Well No. 5. The piezometers are designated PZ3-CI5AS, PZ3-CI5AD, PZ3-CI5BS, and PZ3-CI5BD. All piezometers have 50 feet screens. Piezometers designated "A" are approximately 50 to 100 feet away from the corresponding extraction wells; piezometers designated "B" are approximately 200 to 300 feet away. Piezometers designated "S" are shallow, with screens above 550 feet bgs. Piezometers designated "D" are deeper, with screens below 600 feet bgs.

New Booster Pumps Installation
The existing pump house at the SGVWC Plant B5 was removed to make room for the LGAC units. A new treated water booster pump station with six new booster pumps has been constructed. The power of the booster pumps ranges from 75 horsepower (hp) to 150 hp. The flow rates range from 1,000 gpm to 2,000 gpm. The total capacity of the new booster pump station is 11,000 gpm.

The new booster pumps are housed in a concrete block building constructed as part of the project. The building was designed following the UBC for seismic safety.

Raw Water Pipeline Construction
A raw water pipeline has been constructed to deliver water from Industry Well No. 5 to the treatment facilities at SGVWC Plant B5.

Treated Water Pipeline Construction
A treated water pipeline has been constructed to deliver treated water from the SGVWC distribution system to Industry's distribution system. The treated water pipeline runs along Sixth Avenue and Lomitas Ave and terminates at Industry's Lomitas Reservoir.

New Reservoir Construction
An existing reservoir at SGVWC Plant B5 was removed to make room for the LGAC unit. A new 0.6 MG reservoir north of the 3 MG reservoir will be built to restore the storage capacity.

SECTION IV -- CHRONOLOGY OF EVENTS

1981	VOCs were detected above MCLs at Well B5B
1987	VOCs were detected above MCLs at Well B5A
Mar 1994	EPA issued ROD for the BPOU
Jul 1998	Well B5B was shut down because of NDMA detected above the AL
May 1999	EPA issued ESD for the BPOU to include perchlorate, NDMA and 1,4-dioxane as contaminants of concern
Aug 2001 to Feb 2003	Remedial design documents submitted to EPA
Mar 2002	BPOU Project Agreement signed
Mar 2003	EPA approval of remedial design
Jan 2004	SGVWC began to issue Request for Proposals for the VOC, perchlorate, NDMA and 1,4-dioxane treatment facilities
May 2004	RC Foster Corporation was awarded the construction contract and was given a notice to proceed
Jul 2004	SGVWC changed the treatment facility for VOCs from air stripping to LGAC unit
Sep 2006	Construction of the B5 treatment facilities completed

SECTION V -- PERFORMANCE STANDARDS AND CONSTRUCTION QUALITY CONTROL

Raw water and treated water samples for VOCs, perchlorate, nitrate, NDMA and 1,4-dioxane will be sampled and analyzed according to the CDHS permit requirements, which are expected in 2007. Water quality analysis results will be submitted to EPA and CDHS on a monthly basis or as otherwise required by EPA or CDHS.

SGVWC has obtained a permit to discharge industrial wastewater generated at SGVWC Plant B5. The discharge water includes LGAC system backwash water, floors and equipment wash down, along with domestic waste from one restroom. The discharge water will be monitored once every six months for Chemical Oxygen Demand, Suspended Solids, pH, Dissolved Sulfide, Perchlorate, VOCs, and Semi-VOCs. The results are submitted to CSD on a semi-annual basis.

All water and waste water quality samples will be analyzed using EPA or CDHS approved methods at a CDHS certified laboratory. Appropriate quality assurance and quality control are applied to all the samples analyzed.

The construction work was inspected daily by Stetson for compliance with the plans and specifications. Material testing was performed for all concrete placed at the site. Inspections will be conducted by CDHS during the startup and performance testing period, which is anticipated to take place in the Fall of 2006.

During startup testing, samples of the raw water and treated water will be taken regularly to assure the proper operation of the treatment facilities in accordance with the plant's design performance criteria. Testing at startup and during plant operation will ensure that the constructed facilities meet the design criteria.

Several plans and documents were prepared for the construction of the SGVWC Plant B5 Treatment Facilities. The names, authors and the dates of the finalized and approved plans or documents are listed below.

"*Specifications and Contract Documents for Construction of Water Production Well B5E and the Piezometer Clusters*", Stetson Engineers Inc., May 2005.

"*Specification and Contract Document for Construction of the Plant B5 Raw Water Pipeline from Industry Well No. 5*", San Gabriel Valley Water Company, September 2005.

"*San Gabriel Valley Water Company Plant B5 Well Completion Report (Plant B5 and Piezometers, Piezometers for City of Industry Wells)*", Stetson Engineers Inc., November 2005.

"*San Gabriel Valley Water Company Plant B5 Treatment Facility Project, Phase I, and Phase II with Addendums 1 and 2*", Stetson Engineers Inc., April 2004, and November, 2005.

"*Construction Quality Assurance Plan, San Gabriel Valley Water Company B5 Treatment Facility*", Stetson Engineers Inc., September 2004.

"*Sampling and Analysis Plan, Installation of One Groundwater Production Well and Two Dual-Completion Piezometer Clusters for the B5 Treatment Plant*", Stetson Engineers Inc., July 2004.

Compliance with performance standards will be reported to EPA in monthly progress reports and an annual performance evaluation report currently scheduled for submittal to EPA at the end of each March.

SECTION VI -- FINAL INSPECTION AND CERTIFICATIONS

EPA inspected the SGVWC B5 project on September 14, 2006. Two final construction details to be completed are completion of a sewer connection to allow backwashing of the LGAC, and final piping connections for B5E and the new 600,000 gallon reservoir. No problems were observed. In 2007, a public hearing will be held to accept public comments on using the treated water from Plant B5 as a source of drinking water supply. The amended permit from CDHS to operate SGVWC Plant B5 for drinking water will be granted after startup testing demonstrates the effectiveness of the new treatment facilities in removing all the contaminants to non-detectable levels.

SECTION VII -- OPERATION AND MAINTENANCE ACTIVITIES

The scheduled routine maintenance activities for SGVWC Plant B5 treatment facilities are shown on Table 4.

Table 4. Summary of Routine Maintenance

	Daily	Monthly	Quarterly	Annual	After 12,000 Hours
Ion exchange	Check pressure drop across each vessel			Inspect vessel internal parts which include underdrain, vessel lining and nozzles	
UVPhox	Check for lamp failure; respond to warnings or alarms	Complete items on maintenance check list	Visually inspect lamp sleeves for fouling		Remove and replace lamps; clean sleeves if necessary
LGAC	Check pressure drop across each vessel				

SECTION VIII -- SUMMARY OF SUBPROJECT COSTS

Capital Costs

In its 1999 ESD, EPA estimated capital cost at $ 27 million for a 7,000 gpm treatment facility at SGVWC Plant B5. Project capital costs were estimated in the 2002 BPOU Project Agreement to be approximately $21 million. A breakdown of this estimate is included in Appendix A. These costs were based on a flow of 7,800 gpm. As of February 15, 2006, the estimated capital cost at completion has remained at approximately $21 million. Actual capital costs for the B5 treatment facilities as of July 2006 totaled $13.8 million, and the total expected cost at completion is approximately $21.0 million. Summaries of these costs are included in Appendix A and include engineering, project support, construction, process equipment, start up testing, and laboratory analysis.

Federal funding for the subproject was received through the U.S. Bureau of Reclamation in the amount of $3.0 million, as of September 2006.

Operations and Maintenance Costs

In its 1999 ESD, EPA estimated the Operations and Maintenance (O&M) costs for operating a 7,000 gpm treatment facility at SGVWC Plant B5 to be $3.2 million per year. The O&M cost estimated in the 2002 BPOU Project Agreement was approximately $2.6 million per year. Based on this estimate and an average flow of 7,000 gpm, the cost to treat the water would be approximately $230 per acre-foot. The estimated O&M costs were revised in August 2006 to $2.5 million per year. Based on this estimate, the cost to treat the water would be approximately $221 per acre-foot. A breakdown of this estimate is included in Appendix A.

SECTION IX -- OBSERVATIONS AND LESSONS LEARNED

The lessons learned from the construction and startup testing at SGVWC B6 and VCWD SA1 Plants have been applied to the Treatment Facility. More information will be provided upon completion of startup testing at the Treatment Facility.

SECTION X -- CONTACT INFORMATION

The CRs and Water Entities (WEs) used the following contractor to construct the B5 subproject remedial action facilities:

Bob Foster
RC Foster Construction, Inc.
264 Corporate Terrace Circle
Corona, CA 92879

(909) 738-8211

The EPA used the following contractor for oversight of the remedial action:

CH_2M Hill
David Towell
5370 Kietzke Lane, Suite 200
Reno, NV 89511

(775) 329-7238

Contract Number: 68-W-98-225
Work Assignment Number: 105-RXBF-09M5

The following company analyzed samples:

Montgomery Watson Laboratories
750 Royal Oaks Drive #100
Monrovia, CA 91016

(626) 568-6400

The Project Manager for the CRs and WEs is:

Steve Johnson
Stetson Engineers, Inc.
861 Village Oaks Drive, Suite 100
Covina, CA 91724

(626) 967-6202

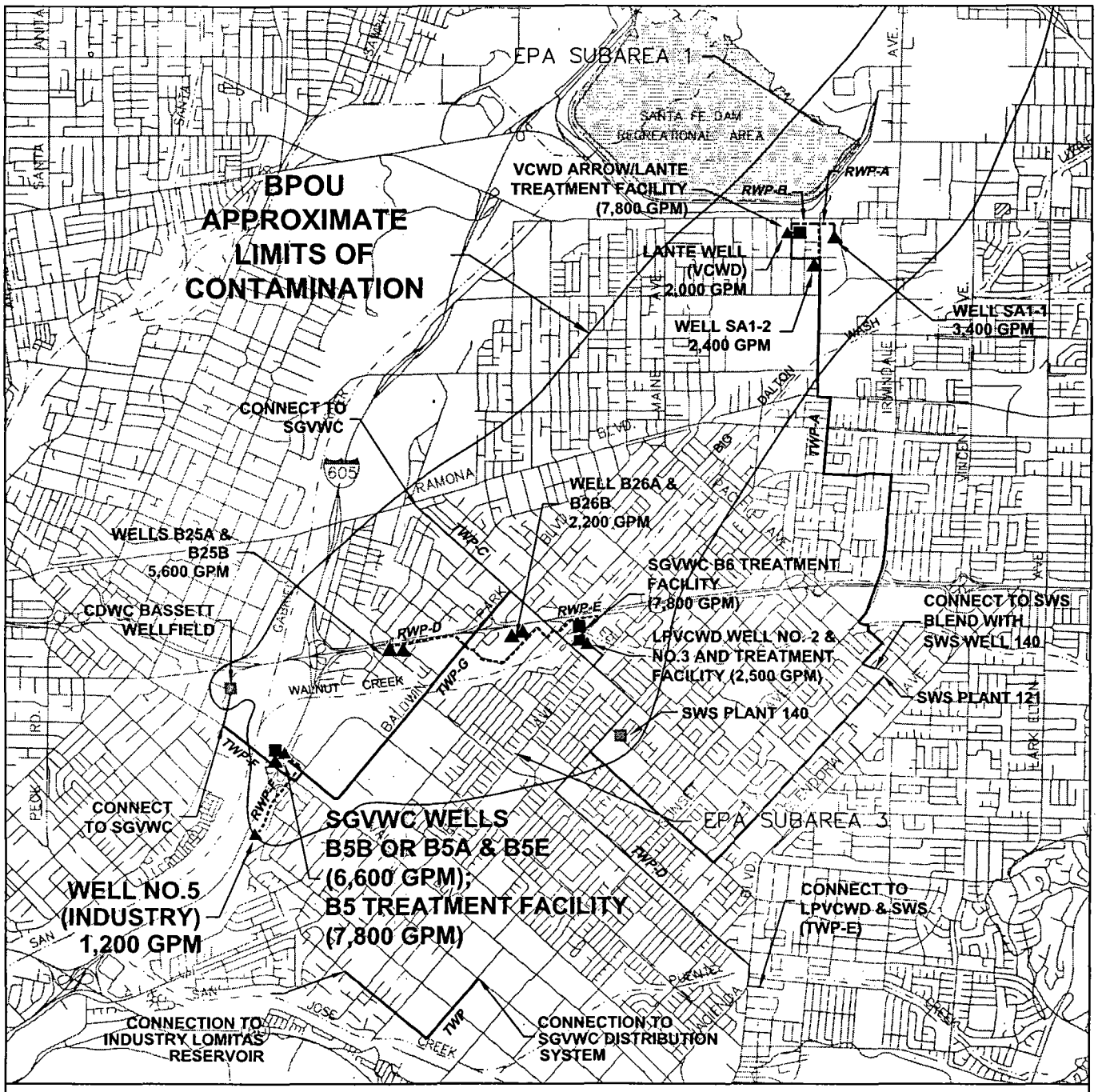
The Project Manager for the EPA is:

Wayne Praskins
U.S. EPA Region 9
75 Hawthorne Street (SFD-7-3)
San Francisco, CA 94105

(415) 972-3181

PLATES

PLATE 1



LEGEND

- TWP — EXISITING TREATED WATER PIPELINE
- TWP — NEW TREATED WATER PIPELINE
- RWP ---------- NEW RAW WATER PIPELINE
- ■ TREATMENT FACILITY
- ▲ EXTRACTION WELLS
- ——— SYSTEM INTERCONNECTION PIPELINE

STETSON ENGINEERS INC.

861VILLAGE OAKS DRIVE, SUITE 100
COVINA, CALIFORNIA 91724
TEL: (626) 967-6202
FAX: (626) 331-7065

2171 E Francisco Blvd., Suite K
San Rafael California 94901

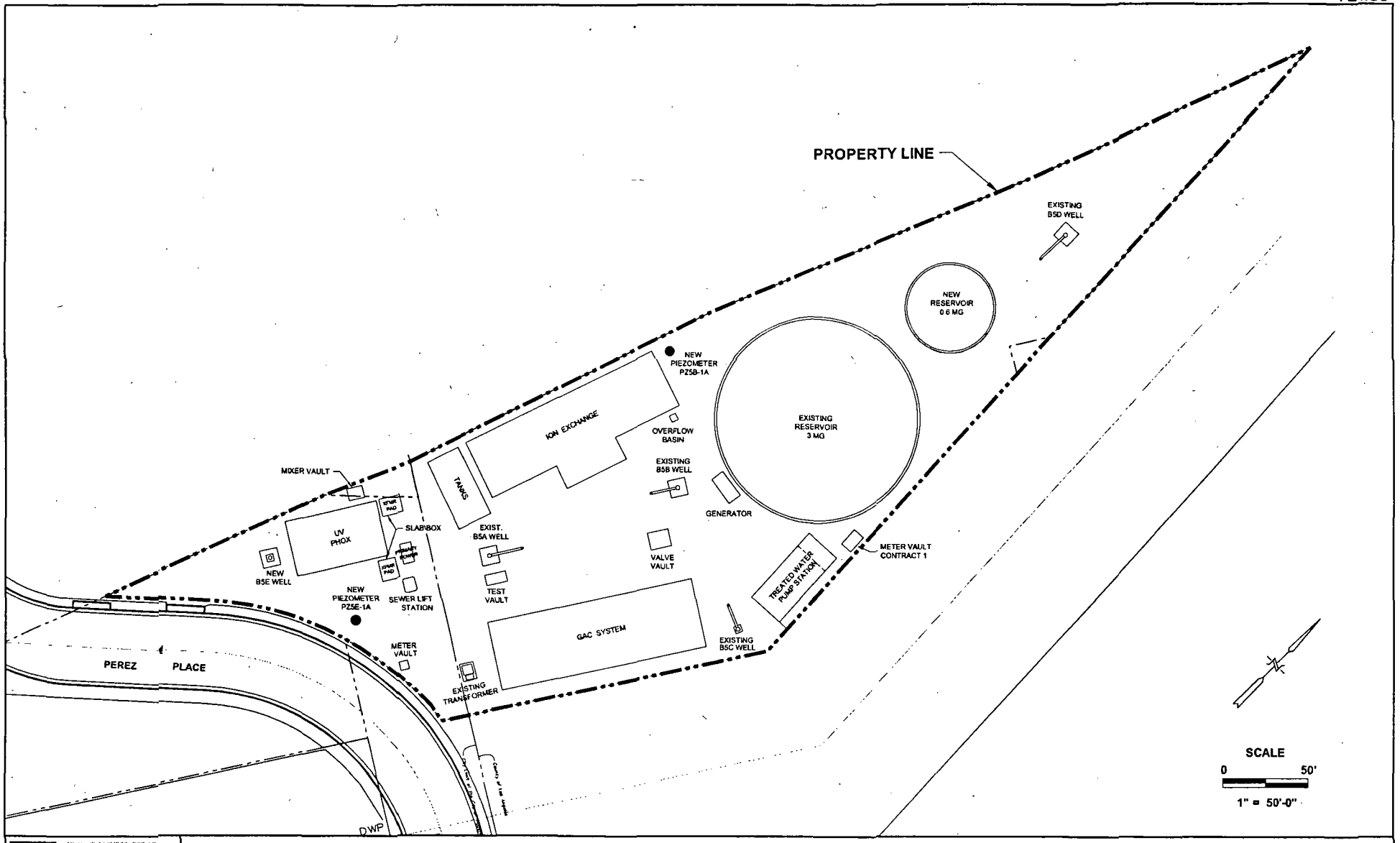
2651 W Guadalupe Rd., Suite A209
Mesa Arizona 85202

SAN GABRIEL VALLEY WATER COMPANY

BALDWIN PARK OPERABLE UNIT
EXTRACTION PLAN
LOCATION AND PUMP RATES

E:\JOBS\1963\24\PLATE 1.DWG
E:\JOBS\1963\03\REPORT\PLATE_1.2 PC2

PLATE 2



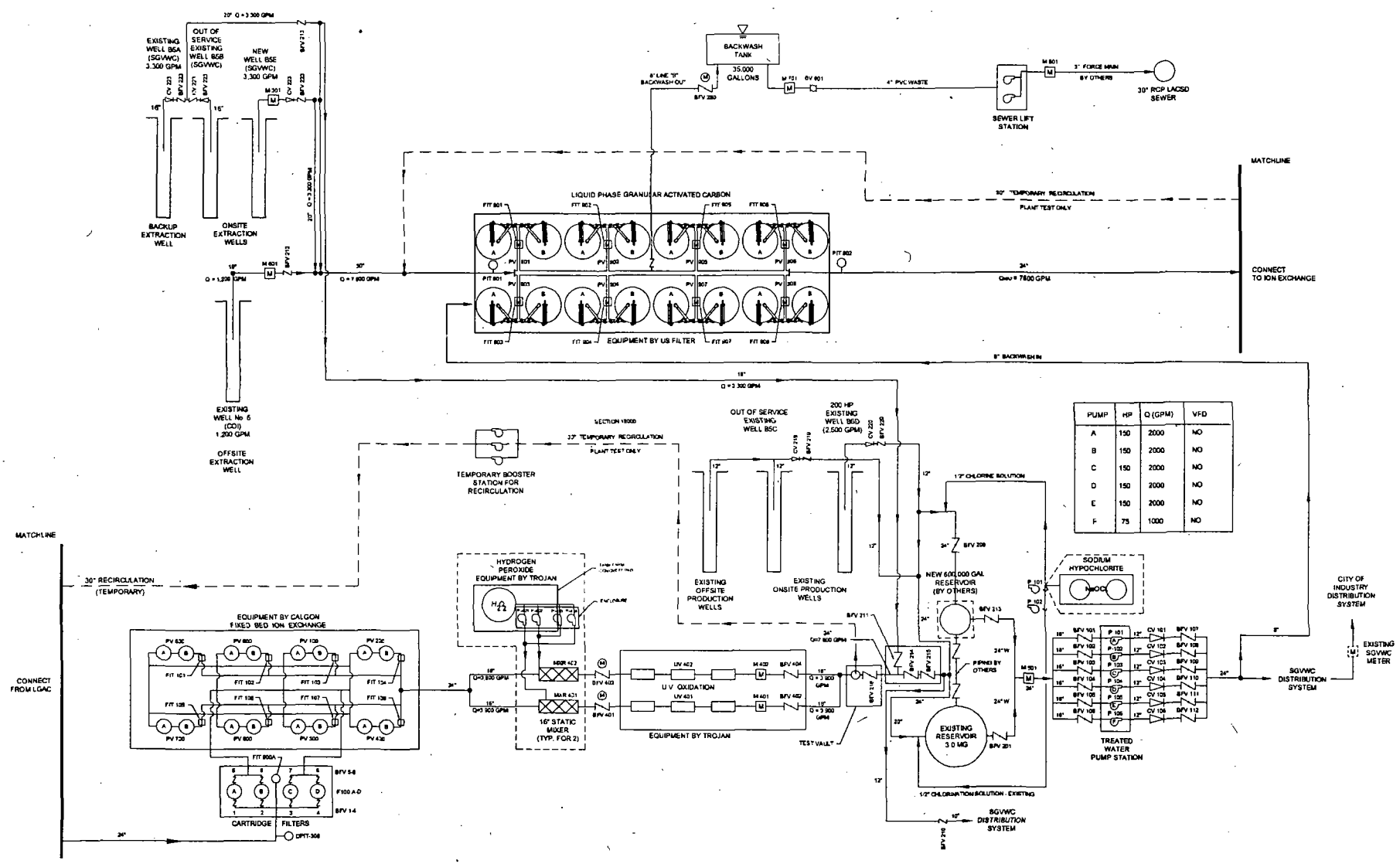
STETSON ENGINEERS INC.

SAN GABRIEL VALLEY WATER COMPANY

PLANT B5 TREATMENT FACILITY PROJECT

SITE PLAN

PLATE 3



PUMP	HP	Q (GPM)	VFD
A	150	2000	NO
B	150	2000	NO
C	150	2000	NO
D	150	2000	NO
E	150	2000	NO
F	75	1000	NO

STETSON ENGINEERS INC.
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SAN GABRIEL VALLEY WATER COMPANY

PLANT B5 TREATMENT FACILITY PROJECT

PROCESS SCHEMATIC

PHOTOS

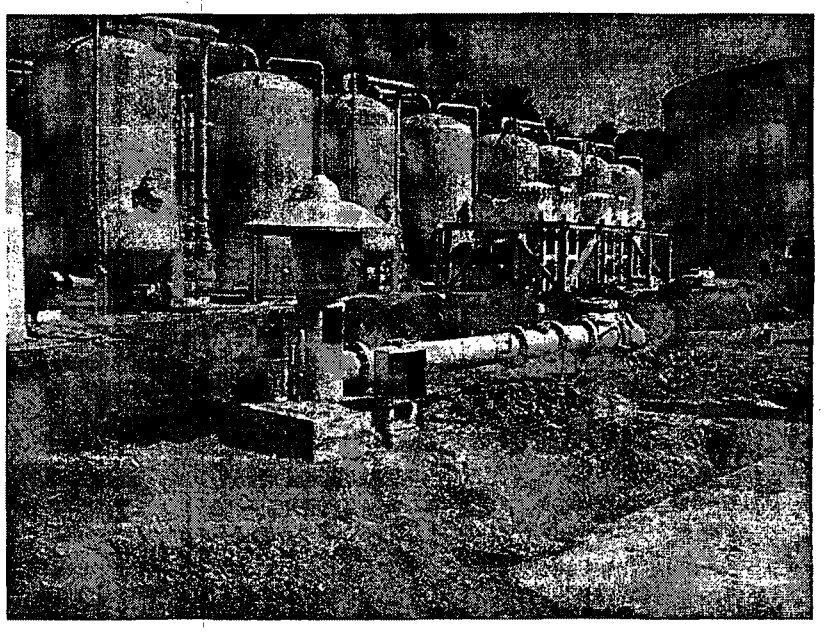

Photo 1 SGVWC Well B5A

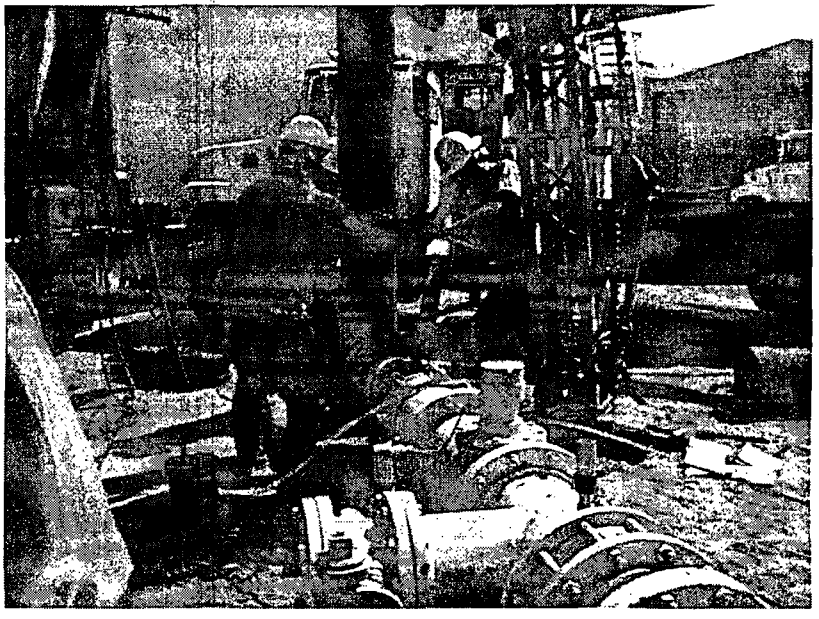

Photo 2 SGVWC Well B5B

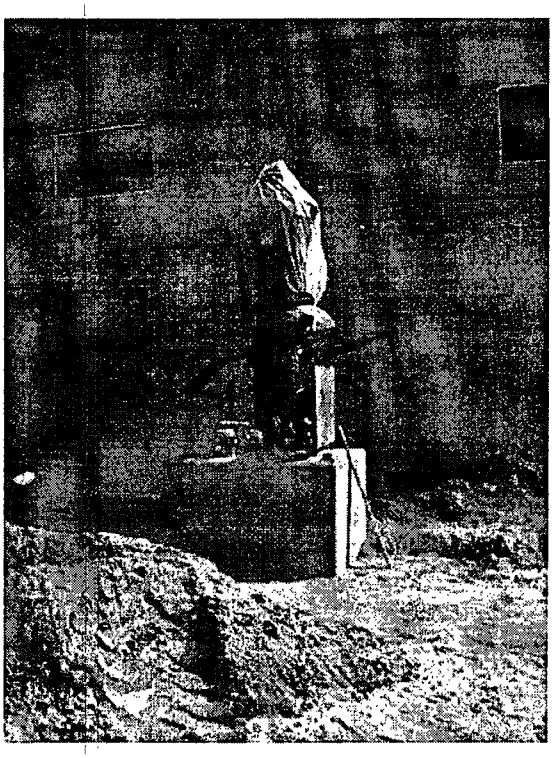

Photo 3 SGVWC Well B5E

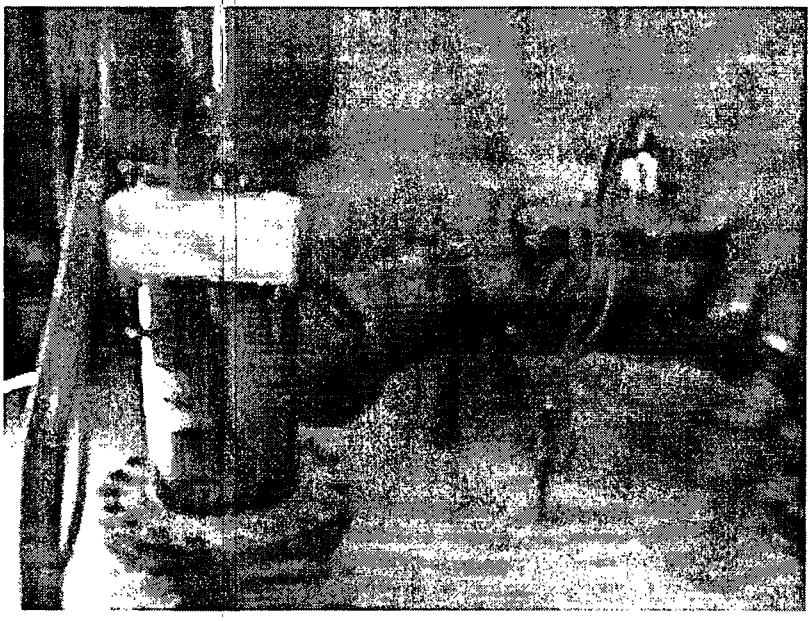

Photo 4 Industry Well No. 5

Photo 5 LGAC Unit

Photo 6 Ion Exchange Unit

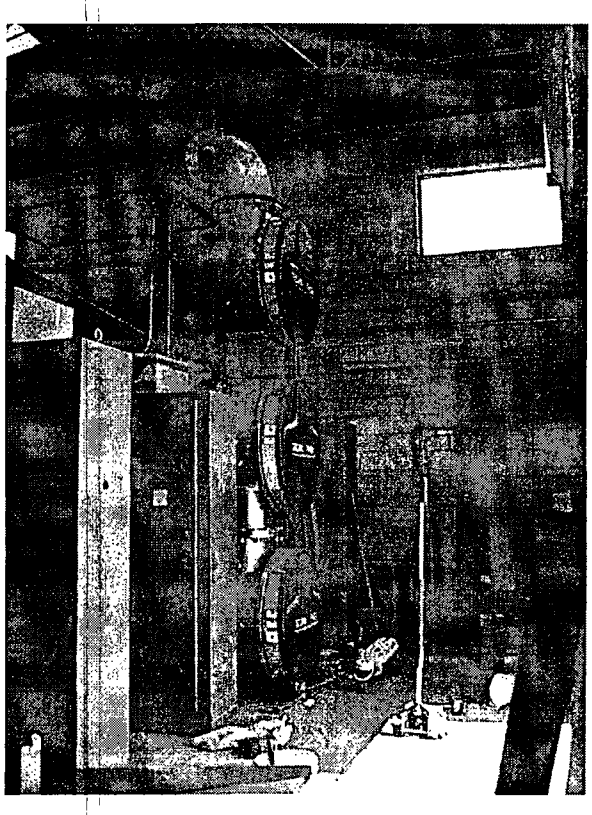

Photo 7 UVPhox System

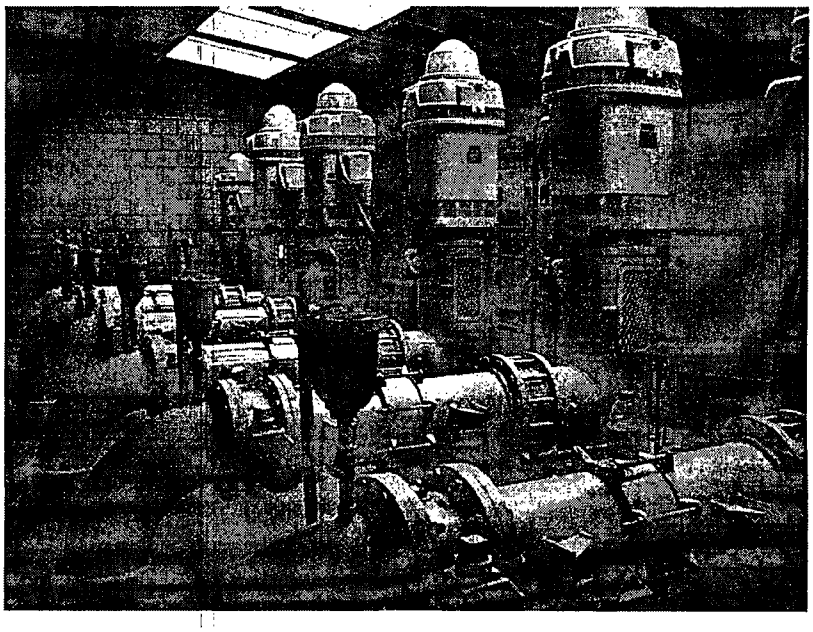

Photo 8 New Booster Pump Station

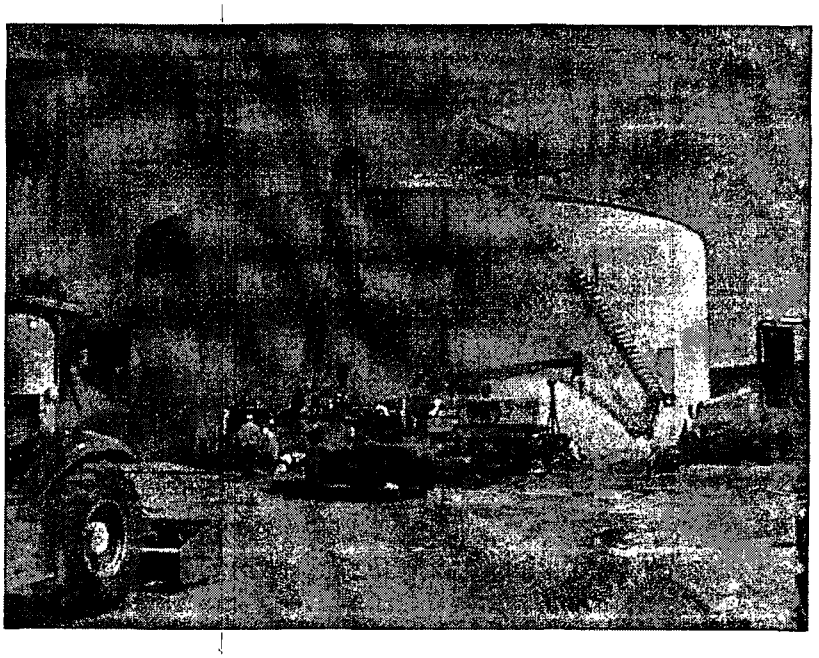

Photo 9 Existing 3 MG Reservoir at Plant B5

Photo 10 Chlorination Station

APPENDIX A

Capital, Operation & Maintenance Costs Tables

SGVWC B5 TREATMENT FACILITY
CAPITAL COST ANALYSIS
PREPARED AUGUST 11, 2006

	BPOU WBS Codes		Preliminary Cost Estimate (3/27/02)* [1]	Actual Costs thru July-06 [2]	Estimated Cost at Completion (2/15/06) [3]
		SGVWC B5			
		San Gabriel Valley Water Co. B5 (7,800 gpm)			
1	1.1.01	Well and Sitework	$ 2,348,000	$ 3,579,885.00	$ 7,448,768
2	1.1.02	VOC Treatment	$ 1,920,000	$ 1,437,666.00	$ 2,083,000
3	1.1.04	Ion Exchange System	$ 5,310,000	$ 2,214,936.00	$ 2,985,691
4	1.1.06	UV System	$ 2,680,000	$ 1,920,254.57	$ 2,352,878
5	1.1.06	Peroxide System (included in UV System)	$ 170,000	$ 8,550.00	$ -
6	1.1.08	Brine Destruction System	$ -	$ -	$ -
7a	1.1.09	Brine Destruction (7,800 gpm/H2SO4)	$ -	$ -	$ -
7b		Treatment Train Independent Operations	$ 620,000	$ -	$ -
8	1.1.09	Brine Disposal Pipeline	$ 520,000	$ -	$ -
9	1.2.02	Treated Water Pipeline (Whittier System)	$ -	$ -	$ -
10	1.2.03	Treated Water Pipeline (Valley & Rumford, Actual)	$ 1,098,250	$ 400,000.00	$ 700,000
11	1.2.04	Industry Pipelines (Raw & Treated)	$ 1,200,000	$ 1,599,984.46	$ 1,651,018
12	1.1.10	EPA Required Monitoring Wells & Piezometers	$ 500,000	$ 271,622.99	$ 646,029
13	1.1.19	Other Capital Construction Costs		$ 24,590.20	$ -
14		**Construction Tota**	**$ 16,366,300**	**$ 11,457,500**	**$ 17,867,400**
15	1.1.21 & 1.2.21	Engineering & Proj Coord (7.5%)	$ 1,227,000	$ 1,855,019.00	$ 1,572,588
16	1.1.22 & 1.2.22	Program Administration (LS)	$ 150,000	$ 35,072.13	$ 150,000
17	1.1.23 & 1.2.23	Permits (LS)	$ 75,000	$ 162,127.00	$ 75,000
18	1.1.24	Brine Line Connection Fee	$ 9,750	$ -	$ -
19	1.1.25 & 1.2.24	Environmental Documents (LS)	$ 25,000	$ 376.53	$ 25,000
20	1.1.90 & 1.2.90	Contingency (5%)	$ 2,455,000	$ -	$ 893,000
21	1.1.26 & 1.2.25	Land Aquisition (LS)	$ 400,000	$ 246,608.56	$ 207,266
22		**Project Subtotal**	**$ 20,708,100**	**$ 13,756,700.00**	**$ 20,790,300**
23		Watermaster & WQA Labor Costs	$ -	$ -	$ -
24	1.3.01	Performance Fee	$ 216,000	$ -	$ 200,000
25		**Project Total - SGVWC B5**	**$ 20,924,100**	**$ 13,756,700.00**	**$ 20,990,300**

* Note: Available as Exhibit K to the March 2002 BPOU Project Agreement.

SGVWC B5 TREATMENT FACILITY
OPERATION AND MAINTENANCE COST ESTIMATE
PREPARED AUGUST 11, 2006

	O & M ITEMS	BPOU Project Agreement Cost Estimate (3/26/02)	Revised O&M Cost Estimate (4/30/06)
1.	Power	$189,000	$189,000
2.	Labor (w/fringe)	$190,000	$75,000
3.	Carbon Purchase	$43,000	$92,800
4.	Carbon Disposal	$0	$0
5.	Transportation	$32,000	$3,000
6.	Disinfection	$5,000	$5,000
7.	Water Testing	$135,000	$50,000
8.	Reports/Compliance	$15,000	$4,000
9.	Permits/Renewals	$10,000	$2,500
10.	Operations Monitoring	$12,000	$4,000
11.	Brine Disposal	$35,000	$0
12.	Matts/Supplies	$1,050,000	$100,000
13.	Off-site Pipe Maint.	$60,000	$6,000
14.	Repair/Replacement	$246,000	$15,000
15.	Contractor Labor	$105,000	$40,000
16.	Direct Eng./Legal	$100,000	$12,500
17.	Insurance	$19,000	$7,500
18.	Taxes	$262,000	$60,000
19.	Water Purchases	$0	$0
20.	Ion Exchange Resin	$0	$1,800,000
	Subtotal	**$2,508,000**	**$2,466,300**
	Other Annual Costs		
a.	O & M Mgmt. Fee	$79,500	$79,500
b.	EPA Monitoring	$0	$0
c.	WM & Legal Admin.	$0	$0
d.	Cost Consultant	$0	$0
e.	Risk Manager	$0	$0
f.	Water Transfer Cost	$0	$0
	Subtotal	**$79,500**	**$79,500**
	TOTAL	**$2,587,500**	**$2,545,800**

NOTES:

1. Power costs based on power rate of $0.07/kwh.
2. March 2002 based on low-energy uv/ox and ISEP
3. Property tax for SGVWC B5, SGVWC B6, SGVWC B4, and CDWC may decrease, but left intact.
4. O & M Management Fee prorated as follows:
   (BPOU Project: 22,000 gpm = 2,500 + 6,000 +6,500 + 7,000 to $250,000)
   (Other $1,750,000 = $1 million CDWC, $450k SWS, $300k B4 to $100,000)
5. Does not include escrow/trust costs.
6. Does not include insurance costs.
7. Carbon Purchase per U.S. Filter Proposal
8. Ion Exchange Resin per Calgon proposal April 2003